

DETERMINANTS OF BENCHMARKING ADOPTION

By

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TABLE OF CONTENTS

	<u>PAGE</u>
TITLE	i
ACKNOWLEDGEMENT	ii
TABLE OF CONTENTS	iii
LIST OF FIGURES	vii
LIST OF TABLES	viii
ABSTRAK	ix
ABSTRACT	x
Chapter 1: Introduction	1
1.0 Introduction	1
1.1 Research Background	1
1.2 Problem Statement	4
1.3 Research Questions	6
1.4 Objective of Study	6
1.5 Significance of Study	6
1.6 Definitions of Terms	7
1.7 Organization of the thesis	8
Chapter 2: Literature Review	9
2.0 Introduction	9
2.1 Importance of Benchmarking	9
2.3 Type of Benchmarking	11
2.4 Benchmarking Process	14
2.5 Pitfalls of Benchmarking	14
2.6 Benchmarking Adoption	15
2.7 Determinants of Benchmarking Adoption	16

2.7.1	<i>Top Management Commitment</i>	16
2.7.2	<i>Internal Assessment</i>	17
2.7.3	<i>Employee Participation</i>	18
2.7.4	<i>Benchmarking Limitation</i>	19
2.7.5	<i>Role of Quality Department</i>	19
2.7.6	<i>Customer Orientation</i>	19
2.8	Conclusion from Previous Studies	20
2.9	Theoretical Framework	21
2.10	Hypotheses	22
Chapter 3:	Methodology	23
3.0	Introduction	23
3.1	Research Design	23
3.1.1	<i>Population and sample</i>	23
3.1.2	<i>Unit of Analysis</i>	23
3.2	Data Collection Method	23
3.3	Variables and Measurement	24
3.3.1	<i>Independent Variables</i>	24
3.3.2	<i>Dependent Variable</i>	26
3.4	Pilot Study	26
3.5	Data Analysis Procedure	27
3.5.1	<i>Goodness and correctness of data</i>	27
3.5.2	<i>Validity and Reliability</i>	27
3.6	Data Analysis Method	27
3.6.1	<i>Descriptive Analysis</i>	27
3.6.2	<i>Test of Relatedness</i>	27
3.6.3	<i>Inferential Statistical Analysis</i>	28
Chapter 4:	Research Findings	29
4.0	Introduction	29
4.1	Descriptive Analysis	29

4.1.1	<i>The Sample Characteristics</i>	29
4.1.2	<i>Benchmarking Adopters Profile</i>	31
4.2	Benchmarking Adoption Profile and Relationship	32
4.3	Factor Analysis	35
4.4	Reliability of Measurements	38
4.5	Discriminant Analysis	39
4.5.1	<i>Estimation of Discriminant Function</i>	39
4.5.2	<i>Interpretation of the Results</i>	39
4.5.3	<i>Validation of the Results</i>	41
4.6	Summary	43
 Chapter 5:	Discussion and Conclusion	44
5.0	Introduction	44
5.1	Discussion of the Findings	44
5.1.1	<i>Benchmarking Profile</i>	44
5.1.2	<i>Determinants of Benchmarking Adoption</i>	46
5.1.2.1	<i>Employee Participation</i>	46
5.1.2.2	<i>Top Management Commitment</i>	47
5.1.2.3	<i>Role of Quality Department</i>	48
5.1.2.4	<i>Customer Orientation</i>	49
5.1.2.5	<i>Benchmarking Limitation</i>	50
5.2	Implications of the Study	51
5.3	Limitations of the Study	51
5.4	Recommendations for Further Research	52
 REFERENCES		 54

Appendix A: Questionnaire

Appendix B: Descriptive Statistics

Appendix C: Chi-square Test

Appendix D: Factor Analysis

Appendix E: Reliability Analysis

Appendix F: Discriminant Analysis

LIST OF FIGURES

Figure 2.1	Generations of Benchmarking	13
Figure 2.2	Theoretical Framework	21

LIST OF TABLES

Table 1.1	Major Areas for Benchmarking in Malaysia	3
Table 4.1	Respondent Companies' Profile	30
Table 4.2	Benchmarking Adopters' Profile	31
Table 4.3	Benchmarking Adoption Profile and Relationship	33
Table 4.4	Varimax Rotated Component Matrix	37
Table 4.5	Reliability of Independent Variables	38
Table 4.6	Summary of Interpretive Measures for Discriminant Analysis	40
Table 4.7	Summary of the Hypotheses Results	41
Table 4.8	Classification Matrix for Cases Selected for Analysis ^a and Holdout Sample ^b	42
Table 4.9	Comparison of Goodness of Measure	43

ABSTRAK

Pertandingan yang sengit dan perkembangan teknologi yang pantas telah memaksa banyak syarikat untuk terus mempertingkatkan prestasi mereka. *Tanda aras* (benchmarking) adalah satu teknik yang mudah lagi berkesan untuk digunakan bagi mencapai kemajuan dalam pelbagai bidang. Namun, penggunaan tanda aras didapati amat berkurangan di sektor pembuatan di Pulau Pinang. Dengan itu, kajian ini dilaksanakan bertujuan untuk mengenalpasti faktor-faktor yang menentukan penggunaan tanda aras dan ingin menitikberatkan keutamaan faktor-faktor ini. Kajian ini dilaksanakan dengan mengagihkannya kepada 250 syarikat pembuatan di Pulau Pinang secara rawak. Soalselidik adalah ditujukan kepada pengurus QA. Akhirnya, data dikumpulkan untuk analisis diskriminan. Keputusan kajian ini mendapati bahawa penglibatan pekerja merupakan faktor yang paling utama bagi menentukan penggunaan tanda aras. Ia diikuti oleh komitmen pihak atasan. Walaubagaimanapun, keutamaan pelanggan, peranan jabatan kualiti dan kekurangan tanda aras didapati tidak berkesan terhadap penentuan penggunaannya. Dengan keputusan kajian ini, adalah diharapkan bahawa ia akan memanfaatkan industri pembuatan dan kerajaan dalam mempromosikan penggunaan tanda aras dan menyediakan langkah-langkah yang bersesuaian untuk membangunkan penggunaannya demi untuk memantapkan kelebihan persaingan di Malaysia.

ABSTRACT

Stiff competition and technology advancement have driven many companies for continuous improvement in their processes, products and services. Benchmarking, as one of the simple yet effective techniques, is vital for performance improvement in many areas. Nevertheless, benchmarking adoption is found lacking in the manufacturing sectors in Penang. Hence, this study is conducted with the objective to identify the determinants of benchmarking adoption and to highlight their importance towards its adoption. This study was conducted by distributing questionnaires to 250 randomly selected manufacturing companies in Penang. The respondents were targeted to QA Manager or QA Directors. Finally, data collected was analyzed using discriminant analysis. The findings revealed that employee participation is the most influential factors to benchmarking adoption. Followed by top management commitment. On the other hand, customer orientation, role of quality department and benchmarking limitation do not have significant discriminating power to affect benchmarking adoption. With the finding of this study, it is hope that it will provide insight to the manufacturing industry and government to promote benchmarking practices and pave the way for further development of benchmarking practice, in order to sustain the competitive advantages in Malaysia.

Chapter 1

INTRODUCTION

1.0 Introduction

In recent years, stiff competition and technology advancement have driven many companies for continuous improvement in their processes, products and services. Hence, many strategic techniques and philosophies have been developed for business improvement. However, The study believes that despite various sophisticated instruments engaged by the multinational companies, benchmarking as one of the simplest tool has been proven for its effectiveness to improve performance in many areas.

1.1 Research Background

The concept of benchmarking is not new. History of benchmarking can be traced back as early as the 1800s, when Francis Lowell, a New England industrialist, traveled to England to study manufacturing techniques at the best British mill factories. Followed by Henry Ford created the assembly line after taking a tour to Chicago slaughterhouse and watched carcasses, hung on hooks mounted on a monorial, moved from one workstation to another. Another example was Toyota's just-in-time production system, which was influenced by the replenishment practices of the United States supermarket (Evan & Lindsay, 2002). However, benchmarking was a total quality management technique brought to the forefront only in the last few years mainly due to the efforts of the Malcolm Baldrige National Quality Award in the United States. It was a technique that was popularized among Japanese industry members, and had proven valuable to US corporations such as Xerox (Camp, 1989 & Sarkis, 2001).

Benchmarking is an activity which organizations use for discovering best practices and to establish a leadership position. Understanding the competition's strengths and how they operate will enable the companies to adapt and build upon their excellent practices for organization's own use. Benchmarking helps to improve the organization's effectiveness and make the changes required to be the world-class organization or industry leader.

Having understood the importance for companies to stay competitive and improve productivity, the National Productivity Corporation (NPC), Malaysia had set up the Malaysian Benchmarking Service (MBS) in 1997 in order to establish an information and reference center for benchmarking training and expertise for industries in Malaysia. The objective of MBS is to provide information on benchmarks and best practices through partnerships and networking. MBS also promotes benchmarking as a means of introducing substantive changes in the quest for excellence, facilitates information-sharing among companies, and provides training in benchmarking.

The increasing challenges of globalization, liberalization and the uncertainties of the world economy have posed tremendous pressure to the Malaysian companies. Under the Eighth Malaysia Plan (2000-2005), one of the policies being thrust is to enhance competitiveness through productivity improvement. In this regards, programmes such as the productivity and quality (P&Q) awards and quality networks have been intensified at the industry level. Besides, the Malaysian government has also encouraged benchmarking activities in the industry and globally, in order to instill the need for productivity improvements.

In January 1998, NPC conducted a study to gauge the level of benchmarking practices among the organizations in Malaysia. Seventy organizations registered with MBS were invited to participate in the study. However, only twenty companies out of thirty-six companies (42%) that responded, indicated that they had conducted benchmarking (Saman, 2000). The major areas for benchmarking in Malaysia are shown in table 1.1.

Table 1.1
Major Areas for Benchmarking in Malaysia

Area of benchmarking	Percentage
Human resource management	43.5
Employee recognition	34.8
Performance evaluation	30.4
Cost control	21.7
Customer service	21.7
Project improvement	17.4
Inventory control	8.7

Source : Saman (2000)

Among the major areas, adoption of human resource management had topped the list with 43.5%, followed by employee recognition, performance evaluation, cost control and customer service. Benchmarking was used least for inventory control.

According to the survey done by Cassell, Nadin and Gray (2001) on the uses and effectiveness of benchmarking in small-and-medium sized enterprises, benchmarking was widely used as an effective tool to improve financial performance, customer satisfaction and quality of products and services. Smaller portions of benchmarking were also used in promoting team spirit, attitudes to quality, process innovation,

employee job satisfaction and communication within the company. Although similar usage composition might not be found in Malaysia, it was worth to note that the application of benchmarking was fairly wide.

1.2 Problem Statement

Over the years, there has been a tremendous development of benchmarking techniques, in terms of benchmarking practices and method, which are widely used in different industries to achieve different goals in the developing countries. However, similar phenomenon is not observed in Malaysia. Even though benchmarking had been regarded as a simple and strategic tool, studies from Saman (2000) and Deou (1998) showed that benchmarking was not widely adopted for improvement by the local companies; with 42% and 53% respectively in service and electrical and electronic sector. Although the statistical figure of the adoption rate might be higher by now, it is still far as compared to the western countries.

Intense globalization and international competition have been taken place. With China committing to open its market for the next five years as part of its World Trade Organization (WTO) obligations opportunities, it will emerge as one of the greatest competitor for Asian countries since it is one of the largest economy in Asia. In addition, implementation of ASEAN Free Trade Area (AFTA) through the elimination of intra-regional tariffs and non-tariff barriers, will also pose great pressure to Malaysia manufacturing industry. In the past, Malaysian manufacturers have obtained numerous benefits from the government protectionism policies, and Malaysia being a developing country is able to attract foreign direct investments due to our competitive advantage in lower operating and labor cost. However, these

advantages may not hold for long in an open economy environment. Thus, Malaysian manufacturing industry need to prepare itself for the world class manufacturing standard in order to ensure their survival in the global economy. One way to obtain frog-leap improvement is through benchmarking adoption.

Apart from that, the nature of benchmarking adoption encourages a company to carry out self-assessment to identify and recognize its own weaknesses while comparing the strength of its target. By doing so, it can prevent a company from indulging in *icarus paradox*, termed by Danny Miller to describe companies become so dazzled by their early success that they believe more of the same type of effort is the way to future success (Hill & Jones, 2004). These companies lose sight of market realities; skeptics about paradigm change and fail to learn from others for future excellence.

Companies in Malaysia must be equipped with competitive advantages to compete for its survival. Benchmarking is one of the way to create a sense of urgency by telling them where they are, how good they have to be, and what they have to do to get there. The ultimate objective is to improve productivity and quality, and enhance national competitiveness.

Thus the exploration of the influential factors, namely the characteristics of an organization that have affected the benchmarking adoption in Malaysia is essential. Increase in benchmarking adoption is therefore important to help the industry to recognize its market position, carry out self-assessment for continuous improvement and to compete in global economy.

1.3 Research Questions

This study attempts to answer the following question:

- 1) What are the influential factors that affect the benchmarking adoption for manufacturing sector?

1.4 Objectives of Study

In view of the current economic pressure, continuous improvement is important for an organization to survive, and benchmarking, as simple and yet powerful tools, which has undergone tremendous development is vital to be used for improvement. Therefore, a better understanding for promoting benchmarking adoption is the utmost interest of this study.

The objectives of this study is:-

1. to identify the main factors that influence a company to adopt benchmarking as a strategic tool for improvement in the manufacturing sector.

1.5 Significance of Study

In spite of the numerous studies on the theories and implementations of benchmarking, empirical study of benchmarking adoption is found lacking. As a result, there is little understanding of the characteristics of an organization, which may contribute to improve benchmarking adoption. Apart from that, previous studies had looked into the external factors (Brah, Ong & Rao, 2000) that drove benchmarking adoption, this study is focused on internal factors for benchmarking adoption. The result of this study is hoped to provide a foundation for benchmarking adoption, in view of the limited researches in this area.

In understanding the influential factors that affect benchmarking adoption for manufacturing sector, it will provide an insight to the industry or government on what to emphasize in order to promote benchmarking practices, and pave the way for the further development of benchmarking practice. The influential factors may serve as pre-conditions for any companies before embarking on the benchmarking project as emphasized by Brah, Ong and Rao (2000) that the existence of critical pre-conditions was significantly correlated with the benefit of benchmarking. Lastly, the findings of this study also intend to provide a guideline to the manufacturing sector that have little or no experience in adopting benchmarking for improvement.

1.6 Definitions of Terms

In order to clarify the objectives of this study, several important terms are defined as followed.

Benchmarking adoption is referred to the utilization of benchmarking by an organization as a technique for improvement.

Determinants of benchmarking adoption are referred to the factors that exist in an organization and may influence an organization to undertake benchmarking.

Top management commitment is referred to the top management efforts to improve the organization performance, process, products or services.

Internal assessment is referred to an organization's general working culture and environment.

Employee participation is referred to the enthusiasm of the employees for continuous improvement.

Benchmarking limitation is referred to the constraints of resources, information, skill and partner of benchmarking.

Role of quality department is referred to the importance of the quality department of an organization to pursue for improvement.

Customer orientation is referred to the efforts of an organization to achieve customer satisfaction.

1.7 Organization of the thesis

In order to provide better understanding of this study, the presentation of this report is organized as follow.

Chapter 1 introduces the background of this study and highlights the importance of benchmarking adoption with problem statement. The objective and the significance of this research are provided. Chapter 2 presents the review of literatures from previous studies about benchmarking and it concluded with a theoretical framework and its related hypotheses. Chapter 3 provides the methodology regarding the research design, the measurements and the analysis methods. Research findings in Chapter 4 presents the analysis results, and lastly Chapter 5 discusses about the overall findings and recommendations.

Chapter 2

LITERATURE REVIEW

2.0 Introduction

Benchmarking has been defined based on various contexts by researchers. The original meaning of the word 'benchmark' referred to a metric unit on a scale for measurement (Sarkis, 2001). In general, benchmarking is defined as the ongoing activity of comparing one's own process, practice, product, or service against the best known similar activity so that challenging but attainable goals could be set and realistic course of action implemented to efficiently become and remain best of the best in a reasonable time (Balm, 1996). Apart from this, benchmarking has been recognized as a process of identifying the highest standards of excellence for products, services, or processes, and then making the necessary improvements to reach those standards (Bhutta & Huq, 1999). Fernandez, McCarthy and Rakotobe-Joel (2001) further extended that benchmarking was a process that facilitates learning and understanding of the organization and its operations. It enabled organizations to identify the key processes that need improvement, and to search for applicable solutions from the best in class.

2.1 Importance of Benchmarking

Benchmarking benefits a company in various ways. According to Camp (1989), it enabled the best practices from any industry to be creatively incorporated into the processes of the benchmark function. Secondly, benchmarking broke down the reluctance of operations to change. It might also identify a technological breakthrough that would not have been recognized in one's own industry. In addition, Benchmarking was a valuable tool for setting goals necessary to remain competitive

and for learning new ideas (Balm, 1996). Benchmarking helped to increase productivity and individual design, enhanced learning and improved growth potential. In addition, it served as a strategic tool for performance assessment and continuous improvement in performance (Elmuti & Kathawala, 1997) and this has been empirically proven by Voss, Ahlstrom and Blackman (1997). By continuously comparing the processes, products and services with similar functions of the best performing enterprises, it allowed an enterprise to study the best methods, to adopt ideas and to become, quickly and effectively, the best (Buyukozkan & Maire, 1998).

In terms of intangible benefits, benchmarking had proven to be the best discipline for getting people to focus on the customer and achieve significant improvement in customer satisfaction. Benchmarking has helped improved communication and established the importance of the internal customer satisfaction (Zairi, 1998).

Bhutta and Huq (1999) explained that benchmarking was a way to move away from tradition. Benchmarking carefully dissected the organization into segments, and then removed and inserted pieces to account for changing environment. Changes would occur once the process had started, and would continue to change and mold the organization for as long as individuals continuously strive to make it better.

In summary, benchmarking had the ability to draw on existing knowledge and tools for strategic planning, competitive analysis, process analysis and improvement, team building, data collection and perhaps most important, organization development (Fernandez et al., 2001).

2.3 Type of Benchmarking

Elmuti and Kathawala (1997) had identified four types of benchmarking which consisted of internal benchmarking, competitive benchmarking, functional or industry benchmarking, and process or generic benchmarking.

- 1) Internal benchmarking. This was benchmarked against operations within a company and it was the simplest form since most of the companies had similar functions inside their business units. This enabled the sharing of a multitude of information within the organization.
- 2) Competitive benchmarking. It was used with direct competitors. It was done externally and the goal was to compare companies in the same markets, which had competing products, services, or work processes.
- 3) Functional or industry benchmarking was performed externally against industry leaders of the best functional operations of certain companies. The benchmarking partners were usually those who shared some common technological and market characteristics.
- 4) Process or generic benchmarking focused on the best work processes. Instead of directing the benchmarking to the business practices of the company, the similar procedures and functions were emphasized. This type of benchmarking technique could be used across dissimilar organizations. Generic benchmarking required a broad conceptualization of the entire process and a careful understanding of the procedures.

Nevertheless, National Council for Voluntary Organization (NCVO) had viewed types of benchmarking from four different aspects. First was *Data Benchmarking*, that focused on measuring and comparing inputs and outputs against a benchmark or a

fixed point to see how well the benchmarker was doing. This fixed point could be one's own standard and improvement targets, the performance of the best of the peers, or nationally defined standards. *Process Benchmarking* focused on comparing processes, that was, the sequence of activities that converts inputs into outputs. Its objective was to analyze best-practice organizations' processes and procedures and learn how to improve one's own. *Functional Benchmarking*, was the comparison of the structure, operations and performance of a whole function. For example, the provision of a finance service to a complex organization, or the role and structures of the client function. Lastly, *Strategic Benchmarking* could be used to compare the implementation of strategic or policy objectives, which included communications strategy, equalities strategy, or transferring a service to a joint venture. The aim was to change the organization, not the process.

Pi-partner limited, a service company for *Performance benchmarking* explained that performance benchmarking was the examination of one of your business processes or activities or procedures, to identify where you were at the moment in terms of cost, quality and value, investigate how it could be improved, and implement changes to obtain that improvement. It could be applied at many different levels of activity, ranging from individual tasks through to complete business processes.

It was obvious that many types of benchmarking had emerged. Kumar and Chandra (2001) suggested that the benchmarking procedure and the type of benchmarking should be chosen and used with caution in order to acquire desired results. In the similar vein, Bhutta and Huq (1999) argued that it was meaningless to compare strategy at internal level but it provided many avenues for improvement when

comparisons were made between the competitors. Ahmed and Rafiq (1998) recommended that organization should use integrated benchmarking because it was not necessary to utilize only any single one tool but to dovetail a range of techniques, as they could often helped to address different sets or sub-areas for improvement.

Kyro (2003) revised the benchmarking concept and forms. Her findings indicated that the evolving nature of the concept and forms had encouraged the revision of understanding of the theoretical bases of benchmarking.

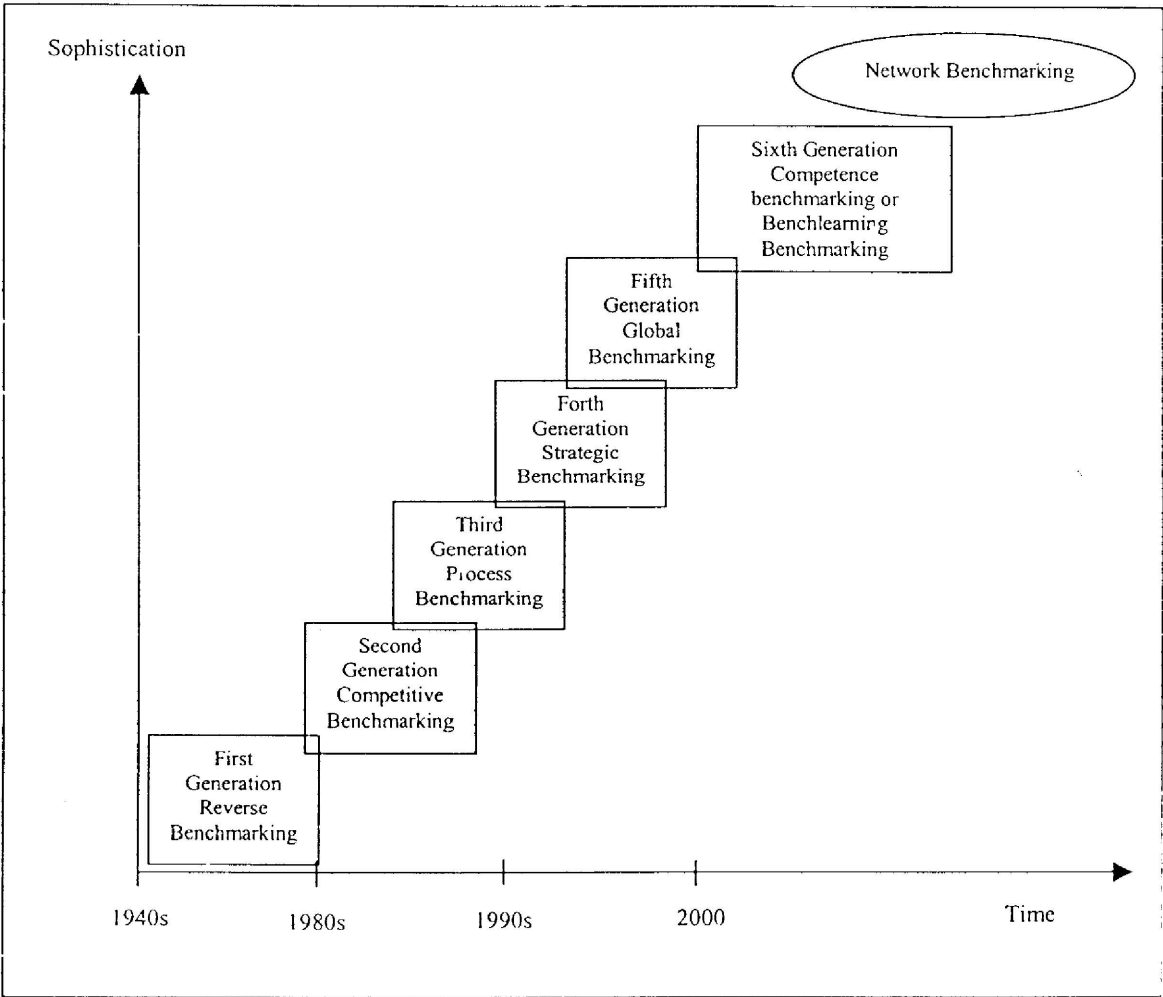


Figure 2.1 . Generations of Benchmarking.
Source : Kyro (2003)

The evolutionary approach to benchmarking was illustrated in Figure 2.1, it clearly showed that benchmarking concepts and their meanings had to be seen as ever-changing, dynamic processes.

2.4 Benchmarking Process

Benchmarking is a simple but structured process and it was generally divided into five stages (Elmuti & Kathawala, 1997; Anderson & Moen, 1999; Fernandez et al., 2001). The five basic stages of benchmarking were planning, forming the benchmarking team, data collection, data analysis and actions for improvement. Buyukozkan and Maire (1998) regrouped the benchmarking process into five different phases, which consisted of self-analysis, pre-benchmarking, benchmarking, post benchmarking, and observation and adjustment. They emphasized that the enterprise must in fact continuously observe the results of the improvement step under way as well as the evolution of the enterprises with which it was compared. It was a never-ending discovery and learning process that identified and evaluated the best practices and performance so that they could be integrated into an organization's present activities to increase effectiveness, efficiency and adaptability.

2.5 Pitfalls of Benchmarking

Although benchmarking had been seen as a useful technique for improvement, several researchers had illustrated some pitfalls of benchmarking if it was not done correctly. In the study of why British companies did not carry out effective benchmarking, Davis and Kochhar (1999) pointed out that lack of use of benchmarking metrics, lack of implementation of best practices, no formal benchmarking strategy, checklist or definition, and no feedback results into business plan target were among the main

factors of benchmarking failures. Freytag and Hollensen (2001) highlighted that sometimes companies too focused on data rather than the actual process, lost focus on customer and employees, over-reliance on quantitative data, perceived benchmarking as a one-time project and the narrow scope of companies studies would eventually make benchmarking ineffective. In addition, improper approach in calculating the performance index and the concept of comparing “apples to oranges” had to be avoided or else customer satisfaction might actually decline due to gaming and poor morale among employees (Maleyeff, 2003).

2.6 Benchmarking Adoption

Fedor, Parsons and Shalley (1996) had develop a conceptual framework in benchmarking adoption, which imbedded benchmarking in the context of organizational theory and organizational change in order to understand the impact of its practices. Their study had provided the basis of benchmarking research direction. Apart from that, as benchmarking is one of Total Quality Management (TQM) strategic tools, the factors of TQM adoption were also relevant to be reviewed for this study. In analyzing the TQM adoption experiences within a corporate staff unit, Fleisher and Nickel (1994) commented that better understanding of the benefits and barriers during the adoption process would help to develop a parsimonious tool for better categorization of the important factors that impact the process, structure, context and the rate of TQM adoption. Yusof and Aspinwall (2000) argued that one of the most influential factors in ensuring TQM adoption success was the formulation of a sound implementation framework prior to embarking on such a change process. By comparing small and large organizations, they suggested that certain organizations characteristics, such as organization structure, culture, communication, to name a few,

could encourage the process of implementing TQM. A closer study to the benchmarking adoption was Deou's (1998), which had looked into the perceptions and success factors for managing benchmarking process.

2.7 Determinants of Benchmarking Adoption

As highlighted in the earlier section, there were underlying factors, which would affect the benchmarking adoption. However, previous findings on determinants of benchmarking adoption were quite limited. Hence, literature review on other related field such as TQM and quality related areas were also scrutinized, in order to uncover the underlying factors. These factors were highlighted and discussed in the following sections.

2.7.1 Top Management Commitment

Top management commitment was one of the most important factors for any management practice adoption and many researchers are undoubtedly recognized this factor (Chen, 1997; Thiagarajan & Zairi, 1998; Agus, 2001; Sureshchandar, Rajendran & Anantharaman, 2001; Sharma & Gadenne, 2001; Antony, Leung, Knowles & Gosh, 2002; Sohail & Teo, 2003). Among the researchers were Kasul and Motwani (1995) who had proposed a set of organizational requirements for TQM implementation, which outlined that top management commitment was one of the main requirements.

Similarly, Ruggieri and Merli (1998) proved that top management commitment appeared to constitute the fundamental element for TQM successful application. Apart from that, Woon (2001) conducted a comparative study for benchmarking level

among different level of TQM maturity showed that there was an association between TQM maturity and business performance. TQM maturity grids used was highly related to management and resources.

Based on the above literatures, it was noticeable that top management commitment might be among the prerequisite factors for benchmarking as top management could support the implementation by allocating budgets and resources, monitoring progress and planning for change (Kasul & Motwani, 1995).

2.7.2 Internal Assessment

Internal assessment of an organization was the focus of looking into an organization's culture, training and internal communication level. Dale (1996) stressed that it was important for organization to recognize the characteristics of its status to the management of quality. As pointed out in Brah's et al. (2000) study, internal assessment was one of the factor that highly contributed to the attainment of benefits of benchmarking.

In term of culture, Jones (2000) had built a set of cultural principles on which a firm needs to act if it wished to move towards sustainability goals. This study had revealed that cultural differences would affect the effectiveness of achieving the organizational goals and objectives. Apart from this, Pun (2001) had also found out that the successful adoption of TQM practices lied largely on the management of cultural dynamics and organizational complexities in Chinese enterprises. Waters (2004) argued that culture affects the strategic management process, from environmental analysis and goal-setting to strategy formulation, implementation, and control. It was

especially important because of its ability to influence individual and organizational goals and performance.

As to training, Agus (2001) found that training was one of the major factor that affected the TQM implementation in Malaysia manufacturing industry. Practically, Sun and Cheng's (2002) research also indicated that most companies placed emphasis on training in practicing TQM.

Thiagarajan and Zairi (1998) revealed that effective top-down and bottom up communication were critical factors for the success of TQM. Foster and Gallup (2002) found that communication problems existed between people in the different functions during benchmarking process. Thus, companies need to involve the entire staff in improving the company and cross-functional teams could take advantage of these multiple perspectives to improve quality.

In studying the benchmarking for strategic manufacturing management, Sweeney (1994) showed that 70% of the firms studied needed a better understanding of their own processes before they could benefit from benchmarking with other organizations. Similarly, true knowledge and understanding of the operations with a company was noted as precondition of benchmarking (Brah et al., 2000).

2.7.3 Employee Participation

Arthur (1994) highlighted that the organization with commitment human resources system, which increased employee participation at work would obtain better organizational performance. This was supported by Cooke (1994) who showed that

effect of employee participation significantly influence the firm performance. In addition, considerable improvement in morale and performance were also made possible if employees were allowed to decide on the performance measures, which drive and direct their own continuous improvement activities. (Daniels & Burns, 1997). Therefore, effective employee involvement practices could bring along attainable employee satisfaction, quality improvement and productivity enhancement in manufacturing enterprises. (Pun, Chin & Gill, 2001)

2.7.4 Benchmarking Limitation

Henczel (2002) stated that benchmarking requires a significant commitment of resources such as time, people and money, etc., without any guarantee that there will be a cost benefit. This finding had supported Cassell et al. (2001) that most companies chose not to benchmark due to the lack of time and resources. Other limitation were difficulty in finding partners (Holloway, Francis & Hinton, 1999), misperception of the need to benchmark, failure to link benchmarking to competitive priorities (Davies et al., 1999), lack of understanding of benchmarking concept (Brah et al., 2000) and difficulty to benchmark tacit factor such as skills and services (Freytag & Hollensen, 2001).

2.7.5 Role of Quality Department

In many organizations, the quality department might pursue most of the quality improvement projects and may play a vital role in selecting and introducing quality improvement techniques. This factor was supported by Antony et al. (2002) who had identified the role of quality department as one of the seven critical success factors for

TQM implementation. Findings from Lee (2004) revealed that activeness of quality department is a critical element in implementing TQM for any organization.

2.7.6 Customer Orientation

The primary objective of implementing TQM and many strategic tools is to satisfy the customers. In this context, customer orientation is viewed as how much attention a company had put into in order to achieve customer satisfaction.

Survey from Sinclair and Zairi (1995) revealed that customer satisfaction was the most important area that drove the organization to improvement. Agus, Krishnan and Kadir (2000) suggested that the implementations of TQM could lead to the enhancement of customer satisfaction and ultimately improved the financial performance of manufacturing companies in Malaysia. Therefore customer satisfaction had a strong impact on TQM implementation in order to improve product quality, features and delivery. (Agus, 2001).

2.8 Conclusion from the Previous Studies

The above literature review showed that factors namely, top management commitment, internal assessment, employee participation, benchmarking limitation, role of quality department and customer orientation had played a vital role in TQM adoption. As benchmarking is one of the improvement techniques of TQM, these factors may also significantly influence the benchmarking adoption, which need to be scrutinized in this study.

2.9 **Theoretical Framework**

From the review, it is noted that although many factors related to TQM adoption have been widely examined, benchmarking adoption, in consideration of top management commitment, internal assessment, employee participation, benchmarking limitation, role of quality department and customer orientation, have not been taken considerable attention from the researchers. Therefore this theoretical framework is served to investigate the influential factors (independent variables) that may contribute to the benchmarking adoption (dependent variable).

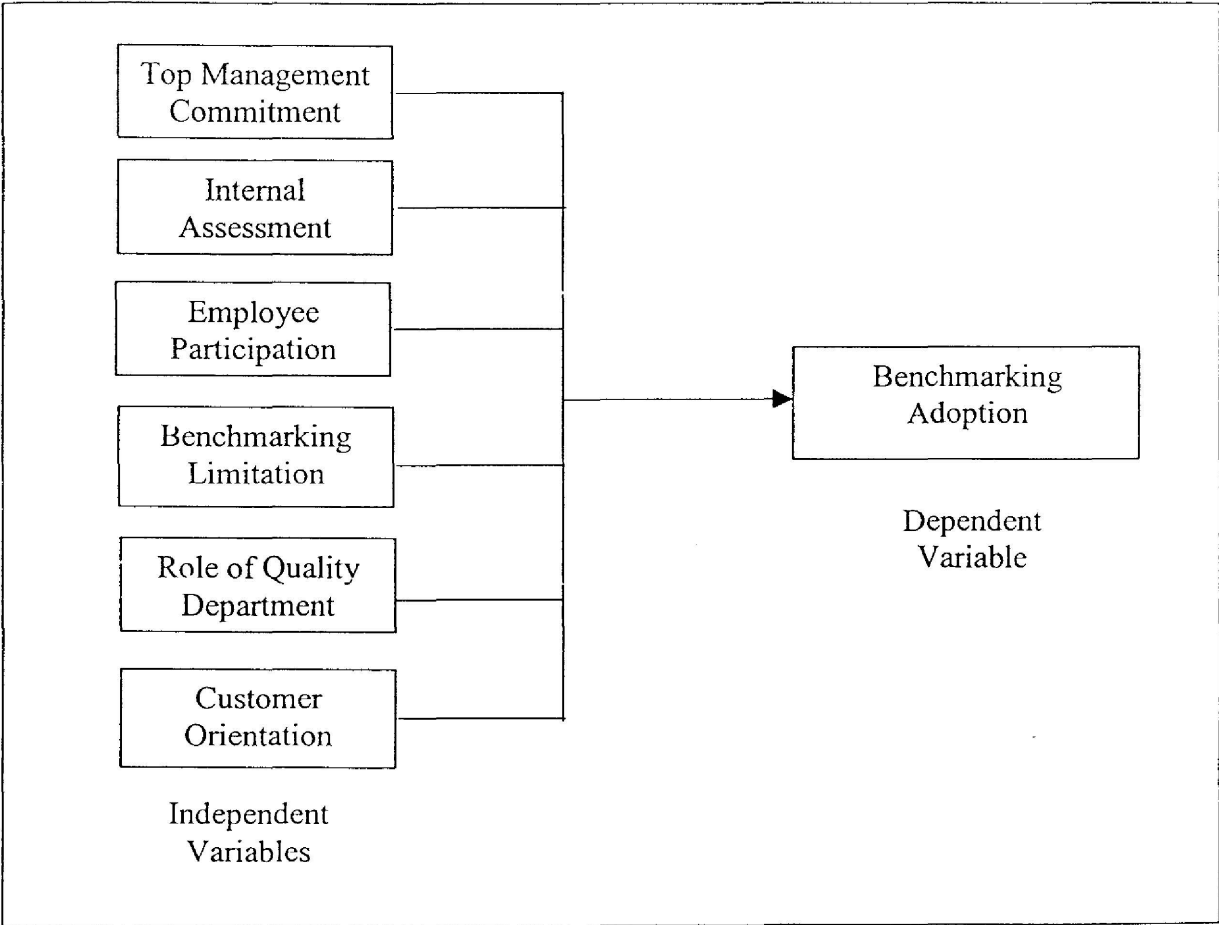


Figure 2.2. Theoretical Framework.

2.10 Hypotheses

Based on the above framework, the following hypotheses are drawn:

H1 : An organization chooses to benchmark or not is influenced by top management commitment.

H2 : An organization chooses to benchmark or not is influenced by Internal Assessment of the organization

H3 : An organization chooses to benchmark or not is influenced by the employee participation.

H4 : An organization chooses to benchmark or not is influenced by benchmarking limitation.

H5 : An organization chooses to benchmark or not is influenced by the role of quality department.

H6 : An organization chooses to benchmark or not is influenced by the customer orientation of the organization.

Chapter 3

METHODOLOGY

3.0 Introduction

The methodology described in this research encompasses the research design, sampling design and a systematic framework on the administration of the research.

3.1 Research Design

3.1.1 Population and Sample

The population of this study comprises of all the manufacturing companies in the Penang that are registered under Federation of Malaysian Manufacturers. As suggested by Sekaran (2003), the analysis samples should be at least 10 times the number of variables in a study. Thus, 70 respondents are targeted in this study, as there are a total of 7 variables.

3.1.2 Unit of Analysis

An organization is used as the unit of analysis due to the aim of the study, which is to identify the influential factors that affect a company to adopt benchmarking.

3.2 Data Collection Method

Data collection was conducted based on mail and personally administered questionnaire. The respondents for this study were targeted to be the QA manager or QA Director of the organization, as they would have the knowledge and influence towards the benchmarking adoption. In order to obtain sufficient samples for analysis, a total of 220 mails were sent out with expected reply rate of 30% and 30

questionnaires were distributed to representatives who worked in a manufacturing industry that could personally reached their QA manager.

Questionnaire was developed in consideration of the examples from previous literatures (Thiagarajan & Zairi, 1998; Deou, 1998; Davies, et al., 1999; Brah, et. al., 2000; Freytag & Hollensen, 2001; Antony et al., 2002) and consultation from related field lecturers. The questionnaire was designed to build understanding of the following sections:

Section A : Company background

Section B : Benchmarking project general information (if any)

Section C : Factors influencing benchmarking adoption.

Section D : Respondent particular

A 5-points Likert scale was used to measure the level of perception of the respondent towards the benchmarking adoption.

3.3 Variables and Measurement

3.3.1 Independent variables :

Top Management Commitment

Top Management Commitment is measured by six items (Question 1-6), which are whether the top management is dedicated to quality improvement and fully understand the improvement objectives and benefits. Top management takes action towards executing the quality improvement policies, is willing to commit time and resources to improvement project, their consideration in integrate quality improvement into strategic planning and the perception of benchmarking benefit.